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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,698	03/26/2001	David F. May	AEI0006.US	9281

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EXAMINER	
COOLEY, CHARLES E	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/817,698	MAY ET AL.	
	Examiner	Art Unit	
	Charles E. Cooley	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

OFFICE ACTION

Priority

1. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. § 119(e).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 56, 58, 59, 60, 61, 62, 63, 64, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307).

The patent to Penny discloses a centrifuge apparatus comprising a non-rotating filter housing 11, 14 having an inner surface (e.g. at 15); a filter 12 within the housing rotatable about an axis 13 relative to the housing for separating substances within the filter 12; said filter having a lower end with holes 18 and 19 extending through said end, said holes being displaced from said axis of rotation approximately half-way between the axis 13 and an outer surface of the filter 12 as seen in Fig. 1a; the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing (as at 15) and with said filter; and a venturi vacuum device 112 for creating a vacuum; and an engine that would inherently have an electrical system in the environment in which the device Penny is intended to be employed. Penny does not disclose a brushless DC motor drive. The patent to Pavlovich et al. teaches a brushless DC motor (Fig. 1) and that brushless DC motors are most suitable for centrifuges. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was made, to have substituted the rotor drive in Penny with a brushless DC motor in such a centrifuge environment as taught by Pavlovich et al. for the purposes of positively driving the filter at a selected speed as opposed to an unreliable reaction drive which is not speed controllable and to increase the reliability of the motor by obviating the need for brushes which prove to be unreliable and to improve the electromechanical and power output

parameters of the motor (col. 1, lines 31-47). The electrical system inherent to Penny is deemed most capable of providing the electrical energy needed to drive the DC motor.

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges. Nonetheless, Pavlovich et al. teaches the recited speeds at col. 6, lines 25-27 and col. 10, lines 30-32.

5. Claims 56, 58, 59, 60, 61, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boyland (US 3,007,629) in view of Pavlovich et al. (US 5,892,307).

The patent to Boyland discloses a centrifuge apparatus comprising a non-rotating filter housing assembly 10, 11, 12, 18, 24, 24' having an inner surface; a filter 13 within the housing rotatable about an axis 16 relative to the housing for separating substances within the filter 13; a drive motor 17; said filter having a lower end with holes 36 extending through said end, said holes being displaced from said axis of rotation as seen in Figs. 1-2; the fluid being in fluid communication with a portion of said inner surface of said non-rotating filter housing (as at 18, 19, 24, 24') and with said filter; and an ejector vacuum device 30 for creating a vacuum. Boyland does not disclose a brushless DC motor drive. The patent to Pavlovich et al. teaches a brushless DC motor (Fig. 1) and that brushless DC motors are most suitable for centrifuges. It would have been obvious to one having ordinary skill in the art, at the time applicant's invention was

made, to have substituted the rotor drive in Boyland with a brushless DC motor in such a centrifuge environment as taught by Pavlovich et al. for the purposes of positively driving the filter at a selected speed and to increase the reliability of the motor by obviating the need for brushes which prove to be unreliable and to improve the electromechanical and power output parameters of the motor (col. 1, lines 31-47).

The recited rotational speeds have been considered but fail to impart or invoke any means or structure to the apparatus claims which defines over the applied prior art and the motors of the prior art are considered most capable of rotating the filter within the recited ranges. Nonetheless, Pavlovich et al. teaches the recited speeds at col. 6, lines 25-27 and col. 10, lines 30-32.

6. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307) as applied to claim 56 above, and further in view of Vado et al. (US 5,656,164).

Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307) discloses all of the recited subject matter as noted above with the exception of the speed controller. The patent to Vado et al. discloses a centrifuge apparatus comprising a filter head 14, a housing 2 connected to the filter head 14, a rotatable filter 9 disposed within the housing; the filter having an inlet 12 and an outlet 7; inherently replaceable filter media 11 for improving the filtering efficiency of the solids constituent from the feed fluid; electric motor drive 3 carried by the filter head with a rotatable output shaft 6 coupled with the filter for rotating the filter; and a speed controller 17, 18. It would have been

obvious to one having ordinary skill in the art, at the time Applicant's invention was made, to have provided the filter assembly of Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307) with a speed controller as disclosed by Vado et al. for the purpose of enabling adjustment of the speed of the drive motor (col. 2, lines 13-15 and lines 49-51).

7. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyland (US 3,007,629) in view of Pavlovich et al. (US 5,892,307) as applied to claim 56 above, and further in view of Vado et al. (US 5,656,164).

Boyland (US 3,007,629) in view of Pavlovich et al. (US 5,892,307) discloses all of the recited subject matter as noted above with the exception of the speed controller. The patent to Vado et al. discloses a centrifuge apparatus comprising a filter head 14, a housing 2 connected to the filter head 14, a rotatable filter 9 disposed within the housing; the filter having an inlet 12 and an outlet 7; inherently replaceable filter media 11 for improving the filtering efficiency of the solids constituent from the feed fluid; electric motor drive 3 carried by the filter head with a rotatable output shaft 6 coupled with the filter for rotating the filter; and a speed controller 17, 18. It would have been obvious to one having ordinary skill in the art, at the time Applicant's invention was made, to have provided the filter assembly of Boyland (US 3,007,629) in view of Pavlovich et al. (US 5,892,307) with a speed controller as disclosed by Vado et al. for the purpose of enabling adjustment of the speed of the drive motor (col. 2, lines 13-15 and lines 49-51)

8. **Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307).**

The patent to Penny discloses, as noted above, a centrifuge apparatus comprising a non-rotating filter housing 11, 14 having an inner surface (e.g. at 15); a filter 12 within the housing rotatable about an axis 13 relative to the housing for separating substances within the filter 12; said filter having a lower end with holes 18 and 19 extending through said end, said holes being displaced from said axis of rotation approximately half-way between the axis 13 and an outer surface of the filter 12 as seen in Fig. 1a. Assuming, *arguendo*, that the holes are not displaced from said axis of rotation approximately half-way between the axis 13 and an outer surface of the filter 12, with respect to the limitation of the parameter regarding the distance of the holes from the axis of rotation which is present in newly filed claim 65 at issue, the examiner has found that the specification contained no disclosure of any unexpected results arising therefrom, and that as such the parameter is arbitrary and therefore obvious. Such unsupported limitations cannot be a basis for patentability, since where patentability is said to be based upon particular chosen parameters or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With respect to the limitation of the parameter regarding the distance of the holes from the axis of rotation, it would have been obvious to one of ordinary skill in the art to have provided the filter device defined by the disclosure of Penny (US 5,904,841) in view of Pavlovich et al. (US 5,892,307) with the configuration and/or dimension recited

in the claim which is considered at most an optimum choice, lacking any disclosed criticality.

Applicant has the burden of proving such criticality. *In re Swenson et al.*, 56 USPQ 372; *In re Scherl*, 70 USPQ 204. However, even though applicant's modification may result in great improvement and utility over the prior art, it may still not be patentable if the modification was within the capabilities of one skilled in the art. *In re Sola*, 25 USPQ 433; *In re Normannet et al.*, 66 USPQ 308; *In re Irmscher*, 66 USPQ 314. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation. *In re Swain et al.*, 70 USPQ 412; *Minnesota Mining and Mfg. Co. v. Coe*, 38 USPQ 213; *Allen et al. v. Coe*, 57 USPQ 136.

No probative evidence is of record to demonstrate that the dimension relating to the distance of the holes from the axis of rotation is significant or are anything more than one of numerous dimensions a person of ordinary skill in the art would find obvious for purposes of merely changing the configurations and/or dimensions to obtain different results. *Graham v. John Deere Co.,* 148 USPQ 459.

Note this parameter that is the subject of new claim 65 was added to the specification in the last response as derived from what is seen in originally filed Figure 14. While not an issue of new matter but in light of the point in the prosecution in which this subject matter was disclosed, the instant specification does not and cannot retroactively support any degree of criticality for this limitation.

9. **Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyland (US 3,007,629) in view of Pavlovich et al. (US 5,892,307).**

The patent to Boyland teaches that the outlet holes 36 are at a radial distance from the axis of rotation (col. 2, lines 42-50) but does not disclose the recited distance of half-way between the axis and an outer surface of the filter. With respect to the limitation of the parameter regarding the distance of the holes from the axis of rotation which is present in newly filed claim 65 at issue, the examiner has found that the specification contained no disclosure of any unexpected results arising therefrom, and that as such the parameter is arbitrary and therefore obvious. Such unsupported limitations cannot be a basis for patentability, since where patentability is said to be based upon particular chosen parameters or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical as explained in section (8) above.

With respect to the limitation of the parameter regarding the distance of the holes from the axis of rotation, it would have been obvious to one of ordinary skill in the art to have provided the filter device defined by the disclosure of Boyland in view of Pavlovich et al. (US 5,892,307) with the configuration and/or dimension recited in the claim which is considered at most an optimum choice, lacking any disclosed criticality as explained above.

Response to Amendment

10. Applicant's arguments with respect to the pending claims have been considered but are deemed to be moot in view of the new grounds of rejection necessitated by amendment.

11. Applicant's arguments filed 23 FEB 2006 have been fully considered but they are not deemed to be persuasive.

Contrary to Applicant's conclusion regarding the patent to Penny, the separated cleaned fluid flows through the filter and is discharged and centrifugally flung through holes 18, 19 in a lower end of the rotating filter 12 (which holes are displaced from the axis of rotation 13) and then the discharged fluid contacts an inner portion 15 of the non-rotating housing for draining to a fluid reservoir (see col. 1, lines 23-44).

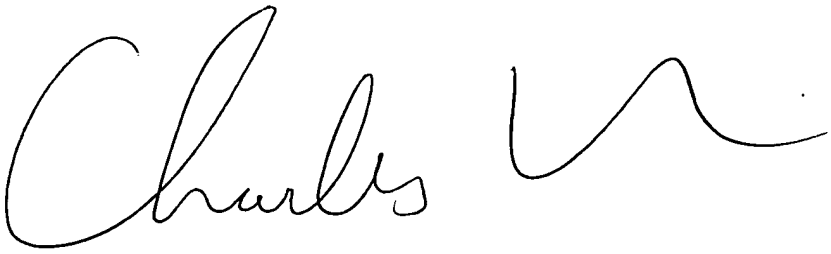
Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Galik discloses outlet holes 162 displaced from and disposed around the axis of rotation of rotor 45.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley whose telephone number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. All official facsimiles should be transmitted to the centralized fax receiving number 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Charles E. Cooley
Primary Examiner
Art Unit 1723

17 May 2006